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Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 10372 (1982): Lock-Grip Pliers [PGD 5: Assembly Hand Tools]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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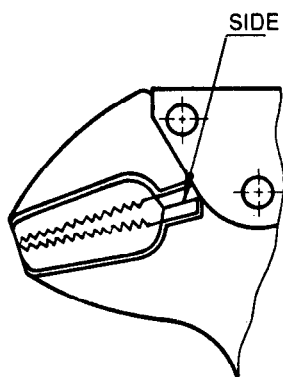
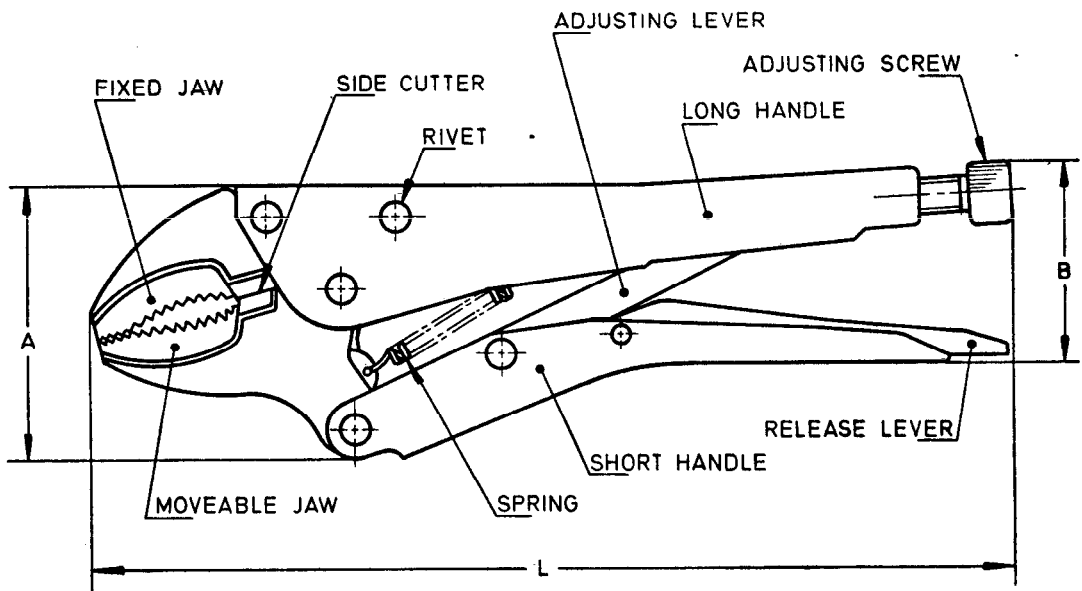




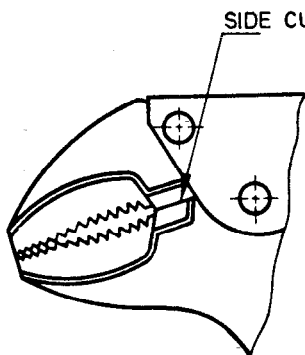
Indian Standard

SPECIFICATION FOR
LOCK-GRIP PLIERS

1. **Scope** — Covers the requirements for lock-grip pliers.
2. **Type**
- Type 1 Straight jaw (side cutter optional).
- Type 2 Curved jaw (side cutter optional).
3. **Dimensions**



TYPE 1 STRAIGHT JAW



TYPE 2 CURVED JAW

All dimensions in millimetres.

Nominal Size	Length $L \pm 10$	A Min	B Max	Full Jaw Opening Min
125	125	25	45	20
175	175	55	45	30
250	250	65	55	35

Note—The sketch is for guidance only.

Hand Tools Sectional Committee, EDC 12; Spanners and Pliers Subcommittee, EDC 12 : 7 [Ref : Doc : EDC 12(3669)]

4. Material — Various components of lock-grip pliers shall be made from materials as shown below:

<i>Component</i>	<i>Material</i>
Jaws	Suitable steel meeting the requirements laid down in 5 and 10 . <i>Example:</i> 35C4, 45C8, conforming to IS : 1570 (Part II)-1979 'Schedules for wrought steels: Part II Carbon steels (unalloyed steels) (first revision)'
Body (long handle, release lever and short handle)	Suitable steels sheet of 1.6 mm minimum thickness
Adjusting screw, adjusting lever and rivets	Suitable steels meeting the requirements laid down in 10 <i>Example:</i> 14C14S14, 11C10S25, conforming to IS : 1570 (Part III)-1979 'Schedules for wrought steels: Part III Carbon and carbon manganese free cutting steels (first revision)'; and 35C4, 45C8 conforming to IS : 1570 (Part II)-1979
Spring	Suitable spring steel

5. Hardness

Jaw 350 to 550 HV (\approx 36 to 52 HRC)

Side cutter 550 to 750 HV (\approx 52 to 62 HRC)

6. Manufacture — The jaws shall be forged to shape from suitable steel. The jaws shall be further hardened and tempered to meet the hardness requirements laid down in **5**. The body shall be pressed to shape as shown in **3**.

7. Workmanship and Finish

7.1 The lock-grip plier shall be free from defects, such as flaws, cracks, rust, burrs and other manufacturing defects.

7.2 The lock-grip pliers shall be greased or given any suitable anti-corrosive coating. The type of anticorrosive coating depends upon the manufacturer unless specifically indicated by the user.

Following are given the suitable plating thickness in case it is nickel-chromium and cadmium plated:

Nickel-chromium plating	5 μ m <i>Min</i> , thickness of nickel coating
Cadmium plating	8 μ m <i>Min</i> thickness of cadmium coating [see IS : 1572-1968 Specification for electroplated coatings of cadmium on iron and steel (first revision)]

8. Designation — A lock-grip plier shall be designated by its name, type, nominal size and the number of the standard.

Example:

A lock-grip plier, Type 2 (curved jaw), having nominal size 250 mm shall be designated as:

Lock-Grip Plier Type 2 — 250 IS : 10372

9. Sampling

9.1 In order to ascertain the conformity of the lot, the procedure for sampling inspection as given in IS : 2500 (Part I)-1973 'Sampling inspection tables : Part I Inspection by attributes and by count of defects (first revision)' shall be followed. The inspection level and AQL for various characteristics shall be according to **9.2** and **9.3**.

9.2 For dimensions, workmanship and finish, a single sampling plan with inspection level IV and AQL 4 percent given in Tables 1 and 2 of IS : 2500 (Part I)-1973 shall be followed.

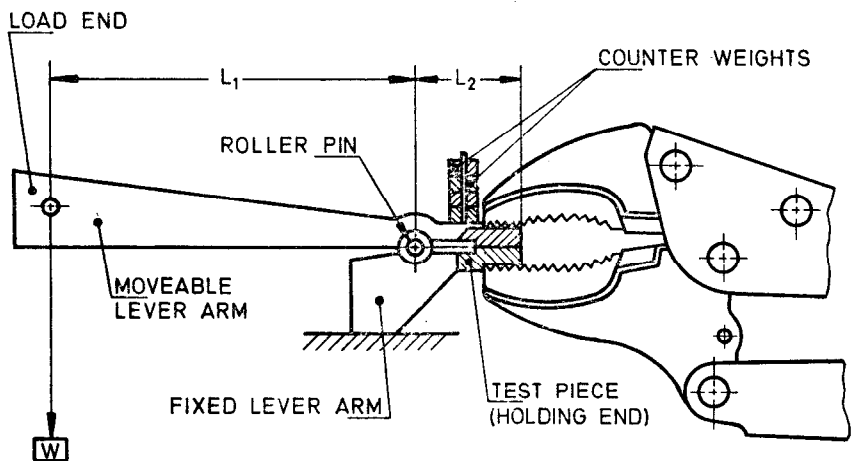
9.3 For hardness and other requirements laid down at 10, a single sampling plan with inspection level II and AQL of 4 percent as given in Tables 1 and 2 of IS : 2500 (Part I)-1973 shall be followed.

10. Tests

10.1 *Locking Test* — An arrangement as shown in Table 2 shall be made with the fixed lower arm, held securely and firmly. Care should be taken that the holding ends of the lever should go in the jaws at least 1/3 of their total length. Counter weights are added on the holding end of the moveable lever arm to balance the mass (*W*) of the load-end so that the beam remains horizontal. A mass as specified in Table 1, is then gradually applied to the load-end. The lock-grip plier should not show any sign of permanent set or deformation in any of its components after completion of the test.

TABLE 1 LOCKING TEST ARRANGEMENT

All dimensions in millimetres.



Nominal Size	L_1	L_2	W kg
125	1 000	100	30
175	1 000	100	80
250	1 000	100	100

Note—The hardness of the test piece (holding ends of lever) should not be less than 30 HRC.

10.2 *Cutting Test (for Pliers Provided with Side Cutters Only)*

10.2.1 *Cutting test* — A piece of steel wire of suitable diameter as recommended below, having a minimum tensile strength 140kPa (140 kg/mm²) shall be cut three times at the point of cutting edge. The cutter shall cut the wire sharply and clearly and shall show no sign of indentation or damage after completion of the test.

Nominal Size of Plier	Diameter of Wire mm
125	1.25
175	1.60
250	2.00

IS : 10372 - 1982

11. Marking — The lock-grip plier shall be marked with nominal size, manufacturer's name and/or trade-mark.

11.1 *ISI Certification Marking* — Details available with the Indian Standards Institution.

EXPLANATORY NOTE

While preparing this specification, considerable assistance has been derived from the details supplied by the leading manufacturers of this product.